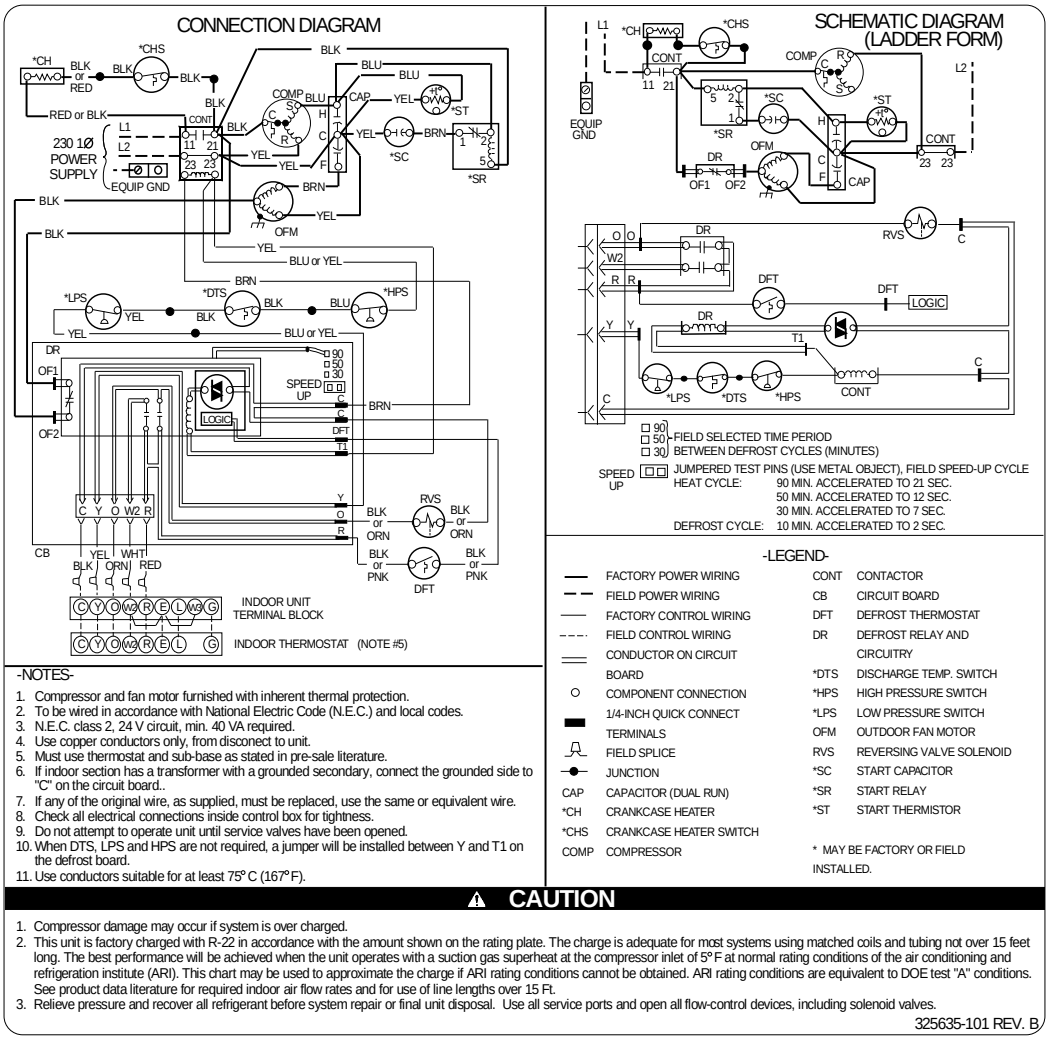
wiring diagrams

208-230-1-60
SERIES B, C
HEAT PUMP

662C
663C

Cancels: WD 662C18.2 WD 662C.18.3
12-99


CONNECTION DIAGRAM
SCHEMATIC DIAGRAM (LADDER FORM)
230 1Ø POWER SUPPLY
EQUIP GND
INDOOR UNIT TERMINAL BLOCK
INDOOR THERMOSTAT (NOTE #5)
FIELD SELECTED TIME PERIOD
BETWEEN DEFROST CYCLES (MINUTES)
JUMPERED TEST PINS (USE METAL OBJECT), FIELD SPEED-UP CYCLE
HEAT CYCLE: 90 MIN. ACCELERATED TO 21 SEC.
50 MIN. ACCELERATED TO 12 SEC.
30 MIN. ACCELERATED TO 7 SEC.
DEFROST CYCLE: 10 MIN. ACCELERATED TO 2 SEC.

-NOTES-

1. Compressor and fan motor furnished with inherent thermal protection.
2. To be wired in accordance with National Electric Code (N.E.C.) and local codes.
3. N.E.C. class 2, 24 V circuit, min. 40 VA required.
4. Use copper conductors only, from disconect to unit.
5. Must use thermostat and sub-base as stated in pre-sale literature.
6. If indoor section has a transformer with a grounded secondary, connect the grounded side to "C" on the circuit board..
7. If any of the original wire, as supplied, must be replaced, use the same or equivalent wire.
8. Check all electrical connections inside control box for tightness.
9. Do not attempt to operate unit until service valves have been opened.
10. When DTS, LPS and HPS are not required, a jumper will be installed between Y and T1 on the defrost board.
11. Use conductors suitable for at least 75° C (167° F).

-LEGEND-

——	FACTORY POWER WIRING	CONT	CONTACTOR
– –	FIELD POWER WIRING	CB	CIRCUIT BOARD
——	FACTORY CONTROL WIRING	DFT	DEFROST THERMOSTAT
- - -	FIELD CONTROL WIRING	DR	DEFROST RELAY AND CIRCUITRY
═══	CONDUCTOR ON CIRCUIT BOARD	*DTS	DISCHARGE TEMP. SWITCH
○	COMPONENT CONNECTION	*HPS	HIGH PRESSURE SWITCH
▬	1/4-INCH QUICK CONNECT TERMINALS	*LPS	LOW PRESSURE SWITCH
	FIELD SPLICE	OFM	OUTDOOR FAN MOTOR
—●—	JUNCTION	RVS	REVERSING VALVE SOLENOID
CAP	CAPACITOR (DUAL RUN)	*SC	START CAPACITOR
*CH	CRANKCASE HEATER	*SR	START RELAY
*CHS	CRANKCASE HEATER SWITCH	*ST	START THERMISTOR
COMP	COMPRESSOR		

* MAY BE FACTORY OR FIELD INSTALLED.

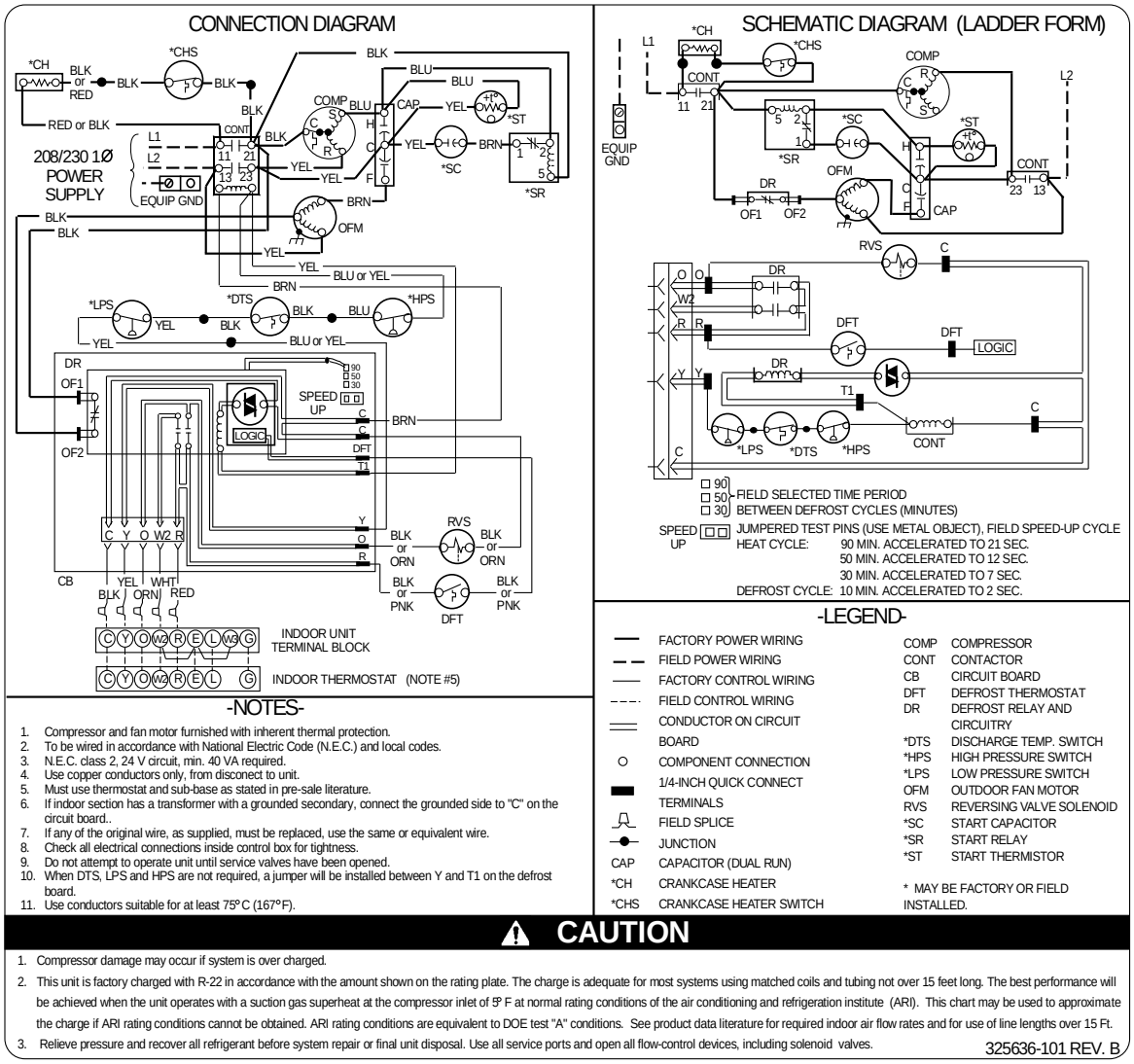
⚠ CAUTION

1. Compressor damage may occur if system is over charged.
2. This unit is factory charged with R-22 in accordance with the amount shown on the rating plate. The charge is adequate for most systems using matched coils and tubing not over 15 feet long. The best performance will be achieved when the unit operates with a suction gas superheat at the compressor inlet of 5° F at normal rating conditions of the air conditioning and refrigeration institute (ARI). This chart may be used to approximate the charge if ARI rating conditions cannot be obtained. ARI rating conditions are equivalent to DOE test "A" conditions. See product data literature for required indoor air flow rates and for use of line lengths over 15 Ft.
3. Relieve pressure and recover all refrigerant before system repair or final unit disposal. Use all service ports and open all flow-control devices, including solenoid valves.

325635-101 REV. B

A99429

Fig. 1—662C018-048 (C)
208-230v, 1 Phase, 60 Hertz


CONNECTION DIAGRAM
208/230 1Ø POWER SUPPLY
EQUIP GND
INDOOR UNIT TERMINAL BLOCK
INDOOR THERMOSTAT (NOTE #5)
SCHEMATIC DIAGRAM (LADDER FORM)
FIELD SELECTED TIME PERIOD
BETWEEN DEFROST CYCLES (MINUTES)
JUMPERED TEST PINS (USE METAL OBJECT), FIELD SPEED-UP CYCLE
HEAT CYCLE: 90 MIN. ACCELERATED TO 21 SEC.
50 MIN. ACCELERATED TO 12 SEC.
30 MIN. ACCELERATED TO 7 SEC.
DEFROST CYCLE: 10 MIN. ACCELERATED TO 2 SEC.

-NOTES-

1. Compressor and fan motor furnished with inherent thermal protection.
2. To be wired in accordance with National Electric Code (N.E.C.) and local codes.
3. N.E.C. class 2, 24 V circuit, min. 40 VA required.
4. Use copper conductors only, from disconect to unit.
5. Must use thermostat and sub-base as stated in pre-sale literature.
6. If indoor section has a transformer with a grounded secondary, connect the grounded side to "C" on the circuit board..
7. If any of the original wire, as supplied, must be replaced, use the same or equivalent wire.
8. Check all electrical connections inside control box for tightness.
9. Do not attempt to operate unit until service valves have been opened.
10. When DTS, LPS and HPS are not required, a jumper will be installed between Y and T1 on the defrost board.
11. Use conductors suitable for at least 75°C (167°F).

-LEGEND-

FACTORY POWER WIRING	
FIELD POWER WIRING	
FACTORY CONTROL WIRING	
FIELD CONTROL WIRING	
CONDUCTOR ON CIRCUIT BOARD	
COMPONENT CONNECTION	
1/4-INCH QUICK CONNECT TERMINALS	
FIELD SPLICE	
JUNCTION	
CAP	CAPACITOR (DUAL RUN)
*CH	CRANKCASE HEATER
*CHS	CRANKCASE HEATER SWITCH
COMP	COMPRESSOR
CONT	CONTACTOR
CB	CIRCUIT BOARD
DFT	DEFROST THERMOSTAT
DR	DEFROST RELAY AND CIRCUITRY
*DTS	DISCHARGE TEMP. SWITCH
*HPS	HIGH PRESSURE SWITCH
*LPS	LOW PRESSURE SWITCH
OFM	OUTDOOR FAN MOTOR
RVS	REVERSING VALVE SOLENOID
*SC	START CAPACITOR
*SR	START RELAY
*ST	START THERMISTOR

* MAY BE FACTORY OR FIELD INSTALLED.

⚠ CAUTION

1. Compressor damage may occur if system is over charged.
2. This unit is factory charged with R-22 in accordance with the amount shown on the rating plate. The charge is adequate for most systems using matched coils and tubing not over 15 feet long. The best performance will be achieved when the unit operates with a suction gas superheat at the compressor inlet of 9° F at normal rating conditions of the air conditioning and refrigeration institute (ARI). This chart may be used to approximate the charge if ARI rating conditions cannot be obtained. ARI rating conditions are equivalent to DOE test "A" conditions. See product data literature for required indoor air flow rates and for use of line lengths over 15 Ft.
3. Relieve pressure and recover all refrigerant before system repair or final unit disposal. Use all service ports and open all flow-control devices, including solenoid valves.

325636-101 REV. B

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Fig. 2—662C060 (C)
208-230v, 1 Phase, 60 Hertz

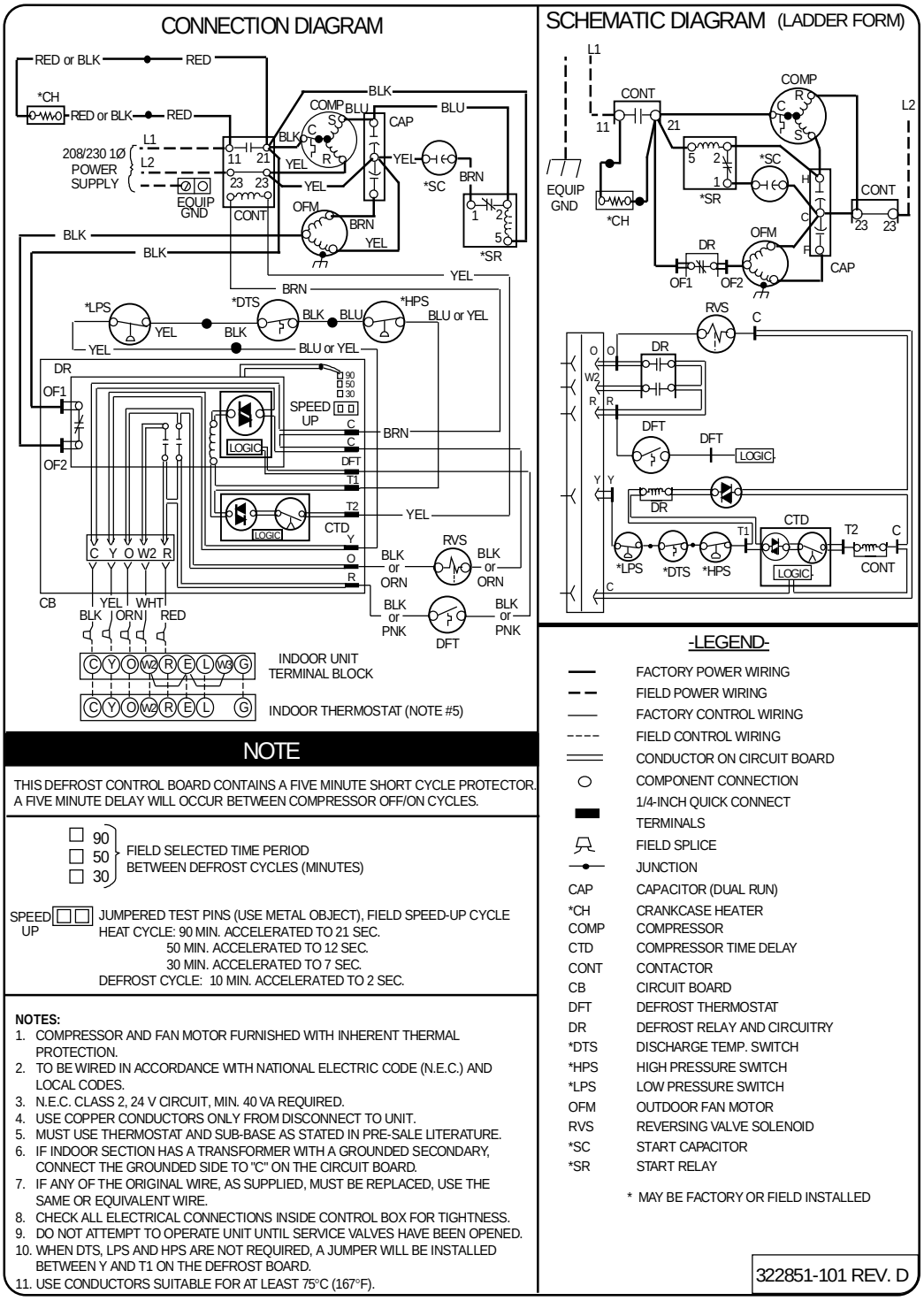
CONNECTION DIAGRAM
SCHEMATIC DIAGRAM (LADDER FORM)
RED or BLK
RED
*CH
208/230 1Ø
POWER SUPPLY
L1
L2
EQUIP GND
CONT
COMP
CAP
OFM
*SC
*SR
BLK
BLU
YEL
BRN
*LPS
*DTS
*HPS
BLU or YEL
DR
OF1
OF2
SPEED UP
LOGIC
DFT
T1
T2
CTD
RVS
C Y O W2 R
CB
YEL WHT
BLK ORN RED
BLK or ORN
BLK or PNK
INDOOR UNIT TERMINAL BLOCK
INDOOR THERMOSTAT (NOTE #5)
-LEGEND-
FACTORY POWER WIRING
FIELD POWER WIRING
FACTORY CONTROL WIRING
FIELD CONTROL WIRING
CONDUCTOR ON CIRCUIT BOARD
COMPONENT CONNECTION
1/4-INCH QUICK CONNECT TERMINALS
FIELD SPLICE
JUNCTION
CAP CAPACITOR (DUAL RUN)
*CH CRANKCASE HEATER
COMP COMPRESSOR
CTD COMPRESSOR TIME DELAY
CONT CONTACTOR
CB CIRCUIT BOARD
DFT DEFROST THERMOSTAT
DR DEFROST RELAY AND CIRCUITRY
*DTS DISCHARGE TEMP. SWITCH
*HPS HIGH PRESSURE SWITCH
*LPS LOW PRESSURE SWITCH
OFM OUTDOOR FAN MOTOR
RVS REVERSING VALVE SOLENOID
*SC START CAPACITOR
*SR START RELAY
* MAY BE FACTORY OR FIELD INSTALLED
NOTE
THIS DEFROST CONTROL BOARD CONTAINS A FIVE MINUTE SHORT CYCLE PROTECTOR. A FIVE MINUTE DELAY WILL OCCUR BETWEEN COMPRESSOR OFF/ON CYCLES.
90
50
30
FIELD SELECTED TIME PERIOD BETWEEN DEFROST CYCLES (MINUTES)
SPEED UP
JUMPERED TEST PINS (USE METAL OBJECT), FIELD SPEED-UP CYCLE
HEAT CYCLE: 90 MIN. ACCELERATED TO 21 SEC.
50 MIN. ACCELERATED TO 12 SEC.
30 MIN. ACCELERATED TO 7 SEC.
DEFROST CYCLE: 10 MIN. ACCELERATED TO 2 SEC.
NOTES:
1. COMPRESSOR AND FAN MOTOR FURNISHED WITH INHERENT THERMAL PROTECTION.
2. TO BE WIRED IN ACCORDANCE WITH NATIONAL ELECTRIC CODE (N.E.C.) AND LOCAL CODES.
3. N.E.C. CLASS 2, 24 V CIRCUIT, MIN. 40 VA REQUIRED.
4. USE COPPER CONDUCTORS ONLY FROM DISCONNECT TO UNIT.
5. MUST USE THERMOSTAT AND SUB-BASE AS STATED IN PRE-SALE LITERATURE.
6. IF INDOOR SECTION HAS A TRANSFORMER WITH A GROUNDED SECONDARY, CONNECT THE GROUNDED SIDE TO "C" ON THE CIRCUIT BOARD.
7. IF ANY OF THE ORIGINAL WIRE, AS SUPPLIED, MUST BE REPLACED, USE THE SAME OR EQUIVALENT WIRE.
8. CHECK ALL ELECTRICAL CONNECTIONS INSIDE CONTROL BOX FOR TIGHTNESS.
9. DO NOT ATTEMPT TO OPERATE UNIT UNTIL SERVICE VALVES HAVE BEEN OPENED.
10. WHEN DTS, LPS AND HPS ARE NOT REQUIRED, A JUMPER WILL BE INSTALLED BETWEEN Y AND T1 ON THE DEFROST BOARD.
11. USE CONDUCTORS SUITABLE FOR AT LEAST 75°C (167°F).
322851-101 REV. D

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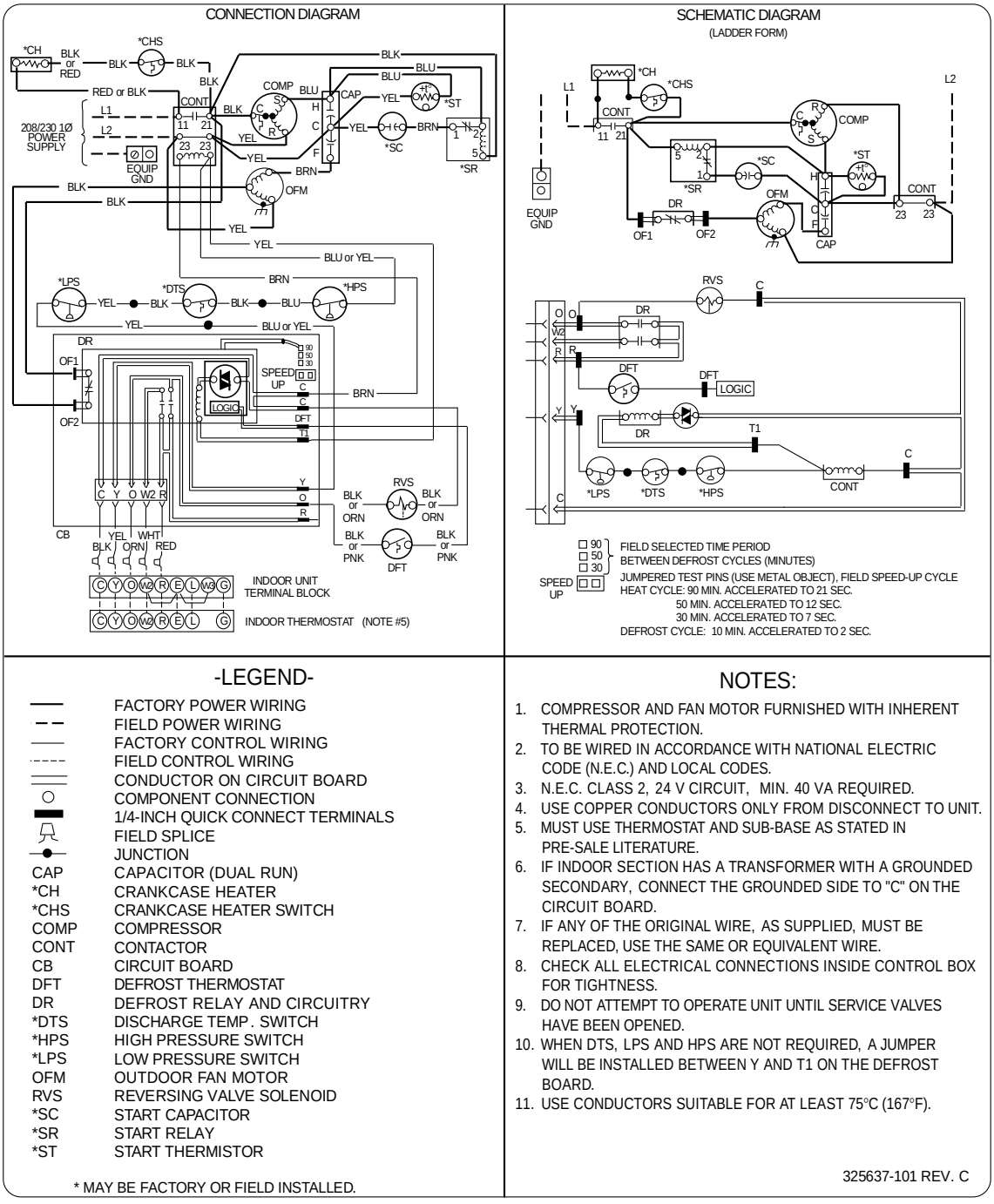
Fig. 3—663C024-042 (B)
208-230v, 1 Phase, 60 Hertz


CONNECTION DIAGRAM
SCHEMATIC DIAGRAM
(LADDER FORM)
INDOOR UNIT TERMINAL BLOCK
INDOOR THERMOSTAT (NOTE #5)
FIELD SELECTED TIME PERIOD
BETWEEN DEFROST CYCLES (MINUTES)
JUMPERED TEST PINS (USE METAL OBJECT), FIELD SPEED-UP CYCLE
HEAT CYCLE: 90 MIN. ACCELERATED TO 21 SEC.
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30 MIN. ACCELERATED TO 7 SEC.
DEFROST CYCLE: 10 MIN. ACCELERATED TO 2 SEC.

-LEGEND-

——	FACTORY POWER WIRING
– –	FIELD POWER WIRING
——	FACTORY CONTROL WIRING
-----	FIELD CONTROL WIRING
═══	CONDUCTOR ON CIRCUIT BOARD
○	COMPONENT CONNECTION
▬	1/4-INCH QUICK CONNECT TERMINALS
	FIELD SPLICE
—●—	JUNCTION
CAP	CAPACITOR (DUAL RUN)
*CH	CRANKCASE HEATER
*CHS	CRANKCASE HEATER SWITCH
COMP	COMPRESSOR
CONT	CONTACTOR
CB	CIRCUIT BOARD
DFT	DEFROST THERMOSTAT
DR	DEFROST RELAY AND CIRCUITRY
*DTS	DISCHARGE TEMP. SWITCH
*HPS	HIGH PRESSURE SWITCH
*LPS	LOW PRESSURE SWITCH
OFM	OUTDOOR FAN MOTOR
RVS	REVERSING VALVE SOLENOID
*SC	START CAPACITOR
*SR	START RELAY
*ST	START THERMISTOR

* MAY BE FACTORY OR FIELD INSTALLED.

NOTES:

1. COMPRESSOR AND FAN MOTOR FURNISHED WITH INHERENT THERMAL PROTECTION.
2. TO BE WIRED IN ACCORDANCE WITH NATIONAL ELECTRIC CODE (N.E.C.) AND LOCAL CODES.
3. N.E.C. CLASS 2, 24 V CIRCUIT, MIN. 40 VA REQUIRED.
4. USE COPPER CONDUCTORS ONLY FROM DISCONNECT TO UNIT.
5. MUST USE THERMOSTAT AND SUB-BASE AS STATED IN PRE-SALE LITERATURE.
6. IF INDOOR SECTION HAS A TRANSFORMER WITH A GROUNDED SECONDARY, CONNECT THE GROUNDED SIDE TO "C" ON THE CIRCUIT BOARD.
7. IF ANY OF THE ORIGINAL WIRE, AS SUPPLIED, MUST BE REPLACED, USE THE SAME OR EQUIVALENT WIRE.
8. CHECK ALL ELECTRICAL CONNECTIONS INSIDE CONTROL BOX FOR TIGHTNESS.
9. DO NOT ATTEMPT TO OPERATE UNIT UNTIL SERVICE VALVES HAVE BEEN OPENED.
10. WHEN DTS, LPS AND HPS ARE NOT REQUIRED, A JUMPER WILL BE INSTALLED BETWEEN Y AND T1 ON THE DEFROST BOARD.
11. USE CONDUCTORS SUITABLE FOR AT LEAST 75°C (167°F).

325637-101 REV. C

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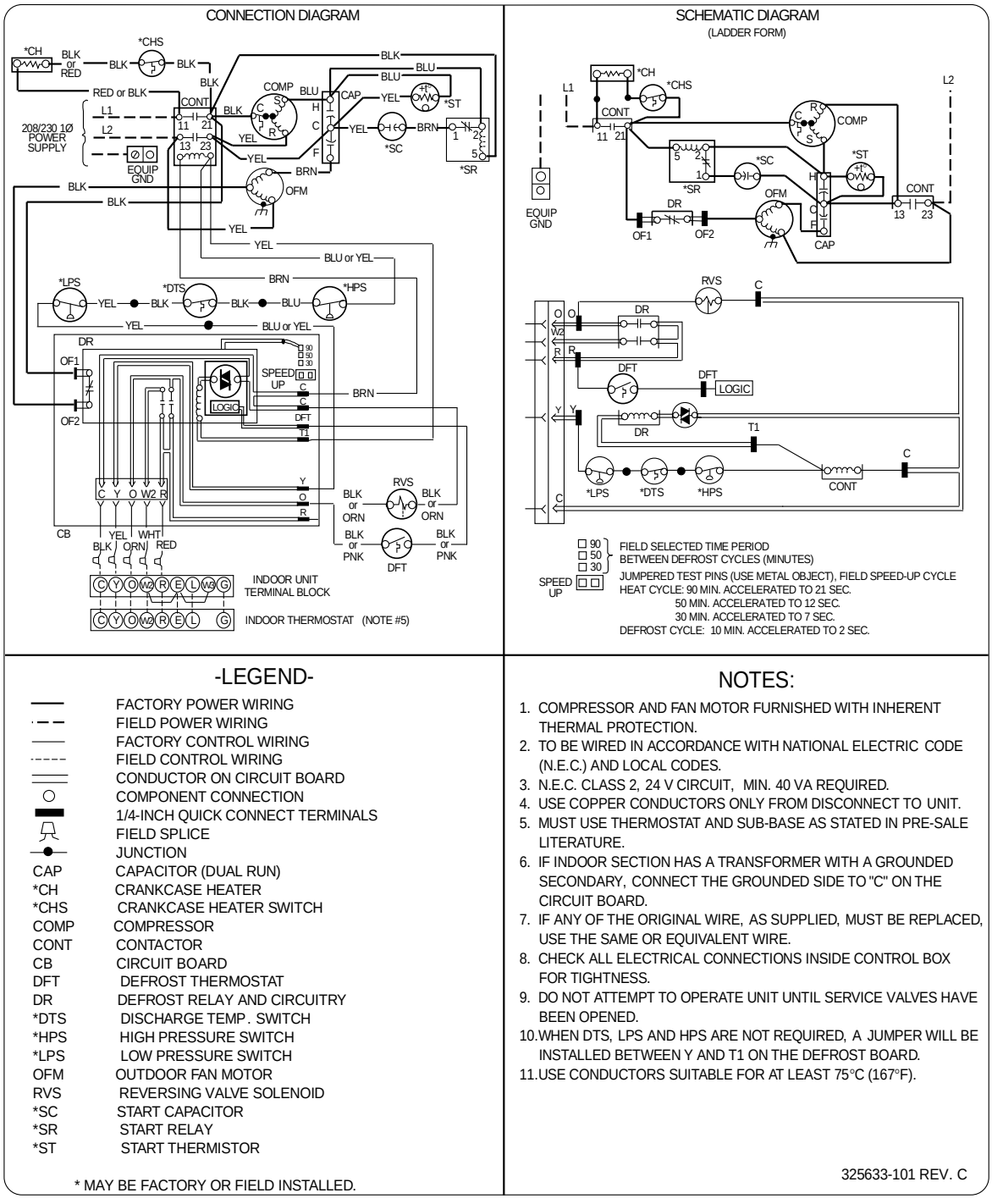
Fig. 4—663C018 (C), 048 (C)
208-230v, 1 Phase, 60 Hertz


CONNECTION DIAGRAM
SCHEMATIC DIAGRAM
(LADDER FORM)
INDOOR UNIT TERMINAL BLOCK
INDOOR THERMOSTAT (NOTE #5)
FIELD SELECTED TIME PERIOD BETWEEN DEFROST CYCLES (MINUTES)
JUMPERED TEST PINS (USE METAL OBJECT), FIELD SPEED-UP CYCLE
HEAT CYCLE: 90 MIN. ACCELERATED TO 21 SEC.
50 MIN. ACCELERATED TO 12 SEC.
30 MIN. ACCELERATED TO 7 SEC.
DEFROST CYCLE: 10 MIN. ACCELERATED TO 2 SEC.

-LEGEND-

———	FACTORY POWER WIRING
- - -	FIELD POWER WIRING
———	FACTORY CONTROL WIRING
- - - - -	FIELD CONTROL WIRING
═══	CONDUCTOR ON CIRCUIT BOARD
○	COMPONENT CONNECTION
▬	1/4-INCH QUICK CONNECT TERMINALS
⏚	FIELD SPLICE
—●—	JUNCTION
CAP	CAPACITOR (DUAL RUN)
*CH	CRANKCASE HEATER
*CHS	CRANKCASE HEATER SWITCH
COMP	COMPRESSOR
CONT	CONTACTOR
CB	CIRCUIT BOARD
DFT	DEFROST THERMOSTAT
DR	DEFROST RELAY AND CIRCUITRY
*DTS	DISCHARGE TEMP. SWITCH
*HPS	HIGH PRESSURE SWITCH
*LPS	LOW PRESSURE SWITCH
OFM	OUTDOOR FAN MOTOR
RVS	REVERSING VALVE SOLENOID
*SC	START CAPACITOR
*SR	START RELAY
*ST	START THERMISTOR

* MAY BE FACTORY OR FIELD INSTALLED.

NOTES:

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3. N.E.C. CLASS 2, 24 V CIRCUIT, MIN. 40 VA REQUIRED.
4. USE COPPER CONDUCTORS ONLY FROM DISCONNECT TO UNIT.
5. MUST USE THERMOSTAT AND SUB-BASE AS STATED IN PRE-SALE LITERATURE.
6. IF INDOOR SECTION HAS A TRANSFORMER WITH A GROUNDED SECONDARY, CONNECT THE GROUNDED SIDE TO "C" ON THE CIRCUIT BOARD.
7. IF ANY OF THE ORIGINAL WIRE, AS SUPPLIED, MUST BE REPLACED, USE THE SAME OR EQUIVALENT WIRE.
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10. WHEN DTS, LPS AND HPS ARE NOT REQUIRED, A JUMPER WILL BE INSTALLED BETWEEN Y AND T1 ON THE DEFROST BOARD.
11. USE CONDUCTORS SUITABLE FOR AT LEAST 75°C (167°F).

325633-101 REV. C

A99428

Fig. 5—663C060 (C)
208-230v, 1 Phase, 60 Hertz

SERVICE TRAINING

Packaged Service Training programs are an excellent way to increase your knowledge of the equipment discussed in this manual, including:

- Unit Familiarization
- Maintenance
- Installation Overview
- Operating Sequence

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